



**Quick Look:**

- Siletz POD Presentation
- Native Planting Guide
- Lake Level-Evaporation Calculation

## Devils Lake Water Improvement District

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[www.DLWID.org](http://www.DLWID.org)

### **AGENDA 2010 July 1**

Regular Meeting: **6 pm, Lincoln City Council Chambers**

- I. Special Order of Business: Siletz Point of Diversion for Rock Creek** 6:00
- a. Presentation: City of Lincoln City and Confederated Tribes of Siletz Indians of Oregon
  - b. Q & A: DLWID Board of Directors
  - c. Q & A: Members of Public (Please limit question to 3 minutes per person)
- II. Election of Officers** 7:00
- III. Establishment of Regular Meeting time, date & place.**
- IV. Minutes of the Previous Meetings**
- V. Financial Report**
- VI. Public Comment** (Agenda Items, Please limit comments to 5 minutes per person)
- VII. Unfinished Business** (Agenda Support Item A)
- a. Lake Level – Evaporation Calculation
  - b. The Devils Lake Plan
    - i. DEQ 319 Grant
    - ii. Native Vegetation
    - iii. Septic Tank Revitalization Program (Seth Lenaerts)
    - iv. Save our Shoreline Campaign (Seth Lenaerts)
  - c. Financial Oversight Committee Report (Randy Weldon)
  - d. Communications Report
  - e. Safety Report
  - f. Vegetation Management
  - g. Thompson Creek
  - h. Sewer
  - i. Water Quality Update
  - j. Erosion Study RFP
  - k. Staff Assessment
  - l. Contracts for Renewal
- VIII. New Business** (Agenda Support Item B)
- a. Internet and phone service
- IX. Non-agenda Items**
- X. Public Comment** (Non-agenda Items, Please limit comments to 5 minutes per person)
- XI. Board Comments & Announcements**
- XII. Adjournment**

Unfinished Business

(Agenda Support Item A)

- a. **Lake Level – Evaporation Calculation:** Our permit requires us to maintain an equal amount of water exiting the system as is entering in August and September (See permit online at [http://www.dlwid.org/Projects/Lake\\_Level/Permit\\_52672\\_Flow.pdf](http://www.dlwid.org/Projects/Lake_Level/Permit_52672_Flow.pdf)). Effectively the District has taken a passive approach to this in years past. At one time the District must have made use of a Pan Evaporation Station as we do have stored behind the City Public Works Building what is at least the remnants of such a station. Data associated with the use of such a station though have not been uncovered. Thus in recent years at least the District has basically sought to assure that no additional water was impounded after August 1<sup>st</sup>-Septemehr 30, but has done little to assure that inflows actually matched the outflows. We did make in conjunction with SDCWC one stream flow measurement on Rock Creek and one on the D River in late August, but did not assess any of the other tributaries such as Thompson Creek, Seid Creek and Neotsu Creek. It was really only after the 2009 review by Water Resources that this issue even largely came to our attention, and last year no other efforts beyond the passive approach and those two flow calculations were made to insured or even determine if additional water was being impounded in August and September. It would seem clear that the District needs to more actively determine if in fact it is meeting the conditions of its permit.

Additionally, at our last meeting a member of the audience questioned the District on how it would account for the evaporation as it pertains to the District's permit for water impoundment. We did not have a clear answer at the time, but I have since collected some information which should provide the District some direction in which to proceed. As one step, I spoke with Water Resources about this recently, questioning how inflows and outflows were defined by the state in regards to water rights. This was a follow up to previous email from Water Resources last summer.

**From:** Greg Beaman [mailto:beamang@wrd.state.or.us]  
**Sent:** Monday, August 31, 2009 12:46 PM  
**To:** Paul Robertson  
**Subject:** RE: DLWID Meets 2009-09-03

Paul: Have you been monitoring Devils Lake inflow? At this time of year the inflow should be equal to the outflow in D river. Do you have an evaporation pan to quantify evaporation for the lake? I did take a look at Rock Cr. and D river and it appears Rock Cr. has more water coming in than the D river has flowing. It doesn't seem to me that the lake would maintain a consistent level with evaporation, it should be slowly declining. Your comments would be appreciated.

Greg

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*Greg Beaman, Watermaster, Dist. 1  
Oregon Water Resources Department  
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Tillamook, OR 97141  
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From my conversation with Watermaster Greg Beaman last week, it is clear that calculating for the loss in evaporation is a requirement to meet the conditions of our permit. He said he would in the near future provide us something official either through a letter or an email, but this is the assertion that we should be working under. Effectively in a reservoir system if inflows are to equal out flows the water height at the dam should be receding, and should certainly not ever increase during that period. Even in the case of a rainfall event, little gain

should be afforded in lake height as inflows are not legally able to be impounded during that time, with the slight exception to water directly landing on the lake’s surface. What that leaves us with is a very convoluted process then of insuring that the lake is not only not gaining height in August or September, but also that the lake in fact recedes based on an how much water is evaporating from the lake during that same period (potentially 5”). This in order for the District to meet the conditions of its permit, and not risk losing the water right, there are a few ways to consider accounting for inflow/outflow or evaporation, and the pros and cons of each.

METHOD	PROS	CONS
<p><b>Direct Measurement:</b> The District could routinely measure all inflows and outflows with a flow meter. The frequency of which would have to be agreed upon by WRD but seemingly weekly would suffice.</p> <p>Major inflows: Rock Creek, Seid Creek, Thompson Creek, and Neotsu Creek</p> <p>Outflow: D River</p>	<ul style="list-style-type: none"> <li>• Most accurate.</li> <li>• Equipment we own jointly with SDCWC.</li> <li>• Staff has some experience/training already.</li> <li>• Would be valuable dataset for nutrient loading estimates in TMDL process or modeling in the future. I met with DEQ on 2010-06-24 at their request to begin considering how Devils Lake could be involved in TMDL process in the near future, and how DEQ may interested in developing a model for the lake. This thus is significant plus to consider.</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming. Full Day required to sample all the streams. Must sample all in the same 24 hour period ideally.</li> <li>• Some difficulty getting good access to streams in public ROW-- Seid Creek in particular.</li> <li>• Some difficulty in determining how much water might need to be let out of the dam to make outflow equal inputs.</li> <li>• Dam not set up to create subtle changes in flow.</li> <li>• Same day coordination with Lake Contractor may be required to open/close dam.</li> </ul>
<p><b>Pan Evaporation:</b> Setting up a station near Devils Lake</p>	<ul style="list-style-type: none"> <li>• District owns a device.</li> <li>• Can release water by evaporation value measured, (i.e. 1”a week).</li> </ul>	<ul style="list-style-type: none"> <li>• Time consuming: Daily Monitoring required</li> <li>• Integrity and usability of the Pan Evaporation Station unknown.</li> <li>• Secure location required for setup</li> <li>• Must have access to water for refilling daily.</li> <li>• Must be in open are free of trees.</li> <li>• Must make accurate rainfall calculations and thus subtractions.</li> <li>• Estimate only must use coefficient in estimate which has not been established of Devils Lake</li> </ul>

<p><b>Using Comparative Pan Evaporation Study:</b> Use longterm dataset for average monthly water evaporated, multiply by 0.7 coefficient for applicability to lakes.</p> <p>Use the evaporation value to estimate the height of lake loss naturally occurring and release water by that height each week.</p> <p>Effectively 5” over 2 months</p>	<ul style="list-style-type: none"> <li>• Long-term dataset established</li> <li>• Scientific integrity over years of experimentation with the technique.</li> <li>• Data available for Astoria, Oregon</li> <li>• 0.7 is standard multiplier established in literature</li> <li>• Simplest and easiest to implement</li> <li>• August evaporation estimated to be 2.87”</li> <li>• September Evaporation 2.07”</li> </ul>	<ul style="list-style-type: none"> <li>• Estimate Only</li> <li>• Prone to annual variation</li> <li>• Not Devils Lake specific.</li> <li>• Standard multipliers (coefficient) can vary from 0.6 to 0.9 in the literature and is highly influenced by local conditions.</li> </ul>
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**Pan Evaporation Study**

ASTORIA EXPERIMENT STATION MONTHLY AVERAGE PAN EVAPORATION (INCHES)

25 year data set: 1948-1973 <http://www.wrcc.dri.edu/htmlfiles/westevap.final.html#OREGON>

JAN	FEB	MAR	APR	MAY	JUN	JUL	<b>AUG</b>	<b>SEP</b>	OCT	NOV	DEC	YEAR
0.56	0.96	1.47	2.21	3.75	3.95	4.65	<b>4.10</b>	<b>2.95</b>	1.65	0.87	0.70	27.82

**Links to information on Pan Evaporation Studies**

Jensen, M. ESTIMATING EVAPORATION FROM WATER SURFACES  
[http://ccc.atmos.colostate.edu/ET\\_Workshop/ET\\_Jensen/ET\\_water\\_surf.pdf](http://ccc.atmos.colostate.edu/ET_Workshop/ET_Jensen/ET_water_surf.pdf)

Linacre, E.T. Estimating U.S. Class-A pan evaporation from few climate data.  
<http://www-das.uwyo.edu/~geerts/cwx/penpan.html>

NOAA Paper: Evaporation from Pans and Lakes, 1955  
[http://docs.lib.noaa.gov/rescue/wb\\_researchpapers/QC852U55no38.pdf](http://docs.lib.noaa.gov/rescue/wb_researchpapers/QC852U55no38.pdf)

Yates, G. 2003. Estimating and Measuring Evaporation from Lake Merced  
[http://www.lmtf.org/FoLM/Plans/Water/Evap\\_tech\\_memo.pdf](http://www.lmtf.org/FoLM/Plans/Water/Evap_tech_memo.pdf)

*Staff Recommendation:* Use the direct measurement technique and compare to Astoria Pan Evaporation Study estimates. Maintain flow out of the lake based on best available data. Flow data is something ideally would be collecting anyways. It is imperative to have flow data when considering nutrient loading and thus establishing additional data on flow would serve the District long-term.

**b. The Devils Lake Plan**

- i. **DEQ 319 Grant:** I have completed and released the RFP. I have had one inquiry the next day, and hope to see many formal responses by our August meeting. As an aside, the grant administrator David Waltz and another DEQ employee Ryan, who does modeling, asked for an opportunity to meet with me as aforementioned. They are advocating internally with DEQ to have Devils Lake included in for the upcoming round on the Mid-Coast Watershed. They realize that DLWID is a major asset and seek to partner with the District. Our work on the database is already a major step in the TMDL (Total Daily Maximum Load) process that looks at nutrient sources that cause impairment and then seeks mechanisms to abate those sources. It is a formal process that has federal standing. If they are successful in lobbying for Devils Lakes inclusion, they would like to develop a nutrient model for the basin if possible. This is basically the next logical step to having received the 319 Grant for the database to begin with. In our initial application to DEQ we applied for additional money (which required additional matching funds) for the creation of a nutrient model, so I was able to relay that it has been something the District has had interest in establishing. Similar to the current 319 Grant, some level of local funding either In-Kind or Cash would likely be necessary to get access to the federal dollars. A nutrient model would be a very useful tool in assessing the need and outcome for restoration work.
  
- ii. **Native Vegetation:** Native Planting Guide available for review. I would hope to begin distribution of the guide to area nurseries and landscapers as a first step as well as get the documents online.
  
- iii. **Septic Tank Revitalization Program** (Seth Lenaerts) I had a conversation with City Manager David Hawker on Tuesday, June 22. He informed me that the latest possible estimate for a septic system draft is mid July. The delay is due to the City Attorney's busy schedule. As of now there is not a hard date for the draft ordinance. Mr. Hawker will try to pressure her for a dead line.

DLWID now has filing system for properties that abut the lake and properties that are on septic. This system is based primarily on taxlots, site address and homeowner's name, but the files also include mailing addresses and spaces for phone numbers and emails. Filing system is color coded and is searchable by the above reference information as well as map location.

**RFP:**

I have had time recently to begin to review a few septic based RFP templates and start drafting a possible RFP for the proposed septic ordinance. I have been working off of EWEB's RFP that they used for their 2008 inspection program. My intention is to have the standard background information and some requirements listed, but to also have a draft that is flexible for changes from the District Board and City Council.

iv. **Save our Shoreline Campaign** (Seth Lenaerts)

There was a presentation for the Save our Shorelines campaign at last months meeting. If the board is confident in the way that this program is progressing and if there will be the resources to do fall plantings then I will continue to recruit and begin planning plantings for the fall.

We have also received the invoice from Spiro landscaping. The total for the three projects was \$1660.75. This consisted of:

Services	26h@\$25= \$650
Plants	\$995.75
Compost	\$15
Total	\$1660.75

The property owners of the sites planted were then individually charged for the number of hours Spiro dedicated to each property and plants used. Residents then paid 25% of their project. The property owners involved in the planting were charged a total of \$375.75. Therefore, the three plantings cost the District \$1,285.

This cost equates to \$15 a linear foot of shoreline or just over \$1 per square foot.

**Future Funding and scope of Projects:**

The presentation at the June meeting was intended to be an update and list ways to promote, recruit and expand participation in the program. Two questions that are more specific to the actual participants is how does the District want to fund plantings and who is eligible?

Part of the presentation about the future of the program included future funding sources. Some possibilities include but are not limited to: mini-grants from the District, staff securing grants for property owners, pay sharing agreements (like what was done for the April planting), district paying for planning or plants only, district or property owner funded. It's also possible and probable that a mix of the above suggestions will be used. Additional funding sources are also possible and constantly evolving.

**Board Action: Does the board find that cost sharing is a suitable incentive to promote shoreline plantings or is there a better alternative?**

- c. **Financial Oversight Committee Report** (Randy Weldon)
- d. **Communications Report:** Previously sent is the Communications Manual for your review. Additionally I will have some Cyanobacteria monitoring posting language for your review.
- e. **Safety Report:** Training completed on new Dissolved Oxygen reagents handling and disposal.
- f. **Vegetation Management:** No Update
- g. **Thompson Creek:** Having trouble getting response from Dr. Field. Called multiple times and emailed as well. Still investigating supplies thus as a result. DEQ suggested looking at

other tracers for human impact though that we might consider, specifically caffeine or birth control metabolites.

- h. **Sewer:** No Update
- i. **Water Quality Update:** Weekly *E. coli* monitoring going well, lake samples within WQ standard, some issues on Thompson and Rock Creeks observed.
- j. **Erosion Study RFP:** revised RFP available for review.
- k. **Staff Assessment:** The budget was passed making available funding for a 10 ½ month (44 week long) position. Consideration of utilization of these funds is presented as is the prospect of extending that timeline based on the potential job sharing with the City of Lincoln City and thus only part-time work but over a long duration. Specific projects to be tackled would include the completion of the septic tank system database, the continuance of the Save our Shoreline campaign and promoting Best Management Practices through education. Staff would also be in charge of grant writing, a potentially highly beneficial revenue creating means for the District. The cost of this position to the District would ultimately be decided through contract negotiation, but \$35,000 is being suggested to cover the cost of salary, payroll taxes, and benefits. In total I am suggesting five main elements to this position; below is an outline of a suggested scope of work with estimates of time contributions for each.

***Part-Time Alternative:*** It is likely that that District could partner with the City of Lincoln City to create two part-time positions, one on the west side of 101 and one on the east side here at DLWID. This is still speculative, but the suggestion has been made to me by the City Manager. Given the same \$35,000, this would open up the opportunity to potentially have staff for nearly 2 years versus the full-time proposal of 10 ½ months. This would be of certain benefit in that the SOS program in particular could be extended into additional growing years, and would be well served by a part-time position. Also any grants obtained by the staffer would have someone associated with them for an additional year which from a practical matter makes a lot of sense as grants tend to move through slowly and require quite a bit of follow up. The last component that would benefit of the District is the opportunity to increase partnerships with the city effectively through a share position. Future projects of sewer or potentially storm drainage assessments and remediation will require strong alliance with the City of Lincoln City.

***Other Considerations:*** The 2010-2011 budget has also made available funds for a number of projects which would be headed up by the project manager. The budget also allows for funding of an intern for water quality in both the late summer. This position would free up those funds as the Project Management Specialist would take on the water quality roles in the last half of the summer 2010. This internship however would return for summer 2011 providing a training and learning opportunity for some new student. Funds have also been allocated for Watershed Protection , \$25,000 and \$10,000 for educational outreach. Theses outlays may either be internally or externally funded in this current budget.

## **Project Management Specialist**

**Water Quality:** Sampling for *E. coli*, pH, DO, EC, Turbidity, and Temperature weekly through Labor Day. Sampling and analysis of cyanotoxins biweekly through bloom (August-October). **(2 weeks -- 5%)**

**SOS:** A great deal of work has gone into beginning this program. We have expanded our knowledge base, got volunteers, and solicited willing landowners among the many accomplishments. Continuing this program though is vital, but requires direct oversight by dedicated staff for success. It is anticipated that this would be an ongoing project that the Project Management Specialist would oversee in the upcoming FY. Plantings are best done in the fall and spring; however for our area winter and summer are also often viable alternatives, so a wide range of opportunities exist. The District has set aside \$25,000 in the 2010-2011 budget which could facilitate funding such work. One use would be through small grants as we have done. Another use might be through the funding of field crews for more advanced work. A couple of job crews or work crews are available for hire in our area such as the Nestucca Connection who helped on the Rock Creek Dam or through Lincoln County. Student participation from Taft 7-12 as explained below under grant writing is another consideration. Basically though the Project Management Specialist would continue the program as it would best serve the District, and thus it would be their responsibility to determine what and how that might be done. **(22 weeks -- 50%)**

**Septic Tank Revitalization:** With the prospect of having the City pass an ordinance, a great deal of data management may be required. This may or may not overlap in the upcoming FY, but is a consideration. Assumingly this would be a small fraction fo the workload though as we would be on the receiving end of inspections, and not involved in the actually inspection process. Thus we would receive the inspection sheet for the first round of properties, which then would be updated into our database. **(2 weeks -- 5%)**

**Grant Writing:** There are a couple specific grants that could be pursued, and additional ones to be researched through Grants.gov and private foundations. The availability and applicability of these grants would be part of some early research by the Project Management Specialist. It would of course require the development of a specific project that fit the funding mechanism, but I am providing two suggestions by way of example. **(9 weeks -- 20%)**

- Example #1: NOAA has a B-Wet ([Bay-Watershed Education and Training Program](#)) educational grant that would tie well with the production of an educational DVD or other educational watershed based experiential training. The funds are available in six areas including the Pacific Northwest to work with K-12 students. This is a tragically underserved population with new cuts announced only June 21, 2010 which are on top of a 20% reduction in school funding only a year ago. Principal Scott Reid at the Lincoln City Chamber event in fact is specifically requesting some partnerships with area businesses and governments to help bridge some of the educational gaps created by 12 reduced school days just announced. How the District could fit in could be multidimensional, but specifically incorporating students into the Save our Shorelines program could provide an excellent avenue for educational outreach as well as watershed benefit. Students are on a 4 day to 4 ½ day schedule at the Taft 7-12 and assumingly at other schools as well. This could be a great partnership for a handful of students to learn about native plants, watersheds, and also contribute something to the community. Following up this training with the production of a DVD would expand the outreach as well as provide significant opportunity.
- Example #2: OWEB (Oregon Watershed Enhancement Board) has a couple of grant programs, one of which is the [small grant program](#). The District successfully applied for a small grant for the



Green Acres Infiltration Project, so we have specific experience at this level. The small grant program provides for public investment on private lands up to \$10,000. These are for restoration projects, any number of which could be identified within our SOS program.

**Educational Outreach:** Development of a multimedia approach to education and outreach targeting lake stewardship. This would consist of a DVD mailed to lakefront property owners. The video product would also be available for airing on government and local access television, be available on the web, and be circulated through the public libraries. Development of these multimedia items would couple well with the Save our Shorelines program. Some video has already been collected in this regard. While outside resources would be required, it is anticipated that coordination of this project would be one of the job details of a project management specialist. Additional video vignettes could be produced covering other best management practices such as erosion prevention & control, septic system maintenance, and storm water control through the use of rain gardens. In the FY 2010-2011 budget \$10,00 was set aside for such a project which might be used outright or as matching dollars for a B-WET grant or other. **(9 weeks – 20%)**

1. **Contracts for Renewal:** All previously sent.

- a. **Internet and phone service:** We received an unsolicited offer from Charter Business to change our phone and email to their services. Currently we pay about \$54 for phone service, plus \$15 for Long Distance and \$50 for internet service. Their offer is 99.99 for everything with a total installation charge of \$148. I tried contacting their customer rep at 541-264-8366 to further inquire, but got no answer, so the customer service end is not outstanding. To make the switch it would require additional hardware, but it is unclear in the quote as to who pays for what. I did later send an email requesting a callback, which I did receive while I was out with DEQ staff and thus will have to relay the additional information.